What is claimed is:

1. A nuclease resistant oligonucleotide or oligonucleotide analog for modulating the activity of a selected sequence of RNA or DNA having a sequence of nucleotide bases specifically hybridizable with said selected sequence and having at least one modified 2'-deoxyfuranosyl moiety.

2. The oligonucleotide or oligonucleotide analog of claim 1 wherein said modification comprises substitution by H, OH, halo, azido, amino, substituted amino, cyano, halomethyl, isocyanato, alkoxyl, thioalkoxyl, haloalkoxyl, alkyl sulfide, alkyl sulfonate, nitrate, nitrite, ammonium, allyloxy or alkeneoxy.

3. The oligonucleotide or oligonucleotide analog of claim 1 wherein said modification comprises substitution by H, OH, halo, azido, amino, allyloxy, methoxy, or alkyl.

4. The oligonucleotide or oligonucleotide analog of claim 1 having from about 5 to about 50 nucleotide bases.

5. The oligonucleotide or oligonucleotide analog of claim 1 wherein said modification is at the 3' end of said oligonucleotide.

6. The oligonucleotide or oligonucleotide analog of claim 1 wherein at least one of the sugar linking groups is replaced with carbon or ether linkages.

7. The oligonucleotide or oligonucleotide analog of claim 6 wherein a 5'-methylene group and carbocyclic sugar are removed.

8. The oligonucleotide or oligonucleotide analog of claim 1 further modified such that at least some of the sugar linking groups comprise a phosphorothioate, methyl phosphonate, or phosphate alkylate.

9. The oligonucleotide or oligonucleotide analog of claim 1 in a pharmaceutically acceptable carrier.

10. The oligonucleotide or oligonucleotide analog of claim 1 wherein said selected sequence of RNA or DNA comprises a portion of a HIV genome.

11. The oligonucleotide or oligonucleotide analog of claim 1 wherein said selected sequence of RNA or DNA comprises a portion of a herpes virus genome.

12. The oligonucleotide or oligonucleotide analog of claim 1 wherein said selected sequence of RNA or DNA comprises a portion of a papilloma virus genome.

13. A method for modulating the production of a protein by an organism comprising contacting the organism with an oligonucleotide or oligonucleotide analog having a sequence of nucleotide bases specifically hybridizable with a selected sequence of RNA or DNA coding for said protein, and having at least one modified 2'-deoxyfuranosyl moiety.

14. The method of claim 13 wherein said modification comprises substitution by H, OH, halo, azido, amino, substituted amino, cyano, halomethyl, isocyanato, alkoxyl, thioalkoxyl, haloalkoxyl, alkyl sulfide, alkyl sulfonate, nitrate, nitrite, ammonium, allyloxy, or alkeneoxy.

15. The method of claim 13 wherein said modification comprises substitution by hydrogen of a hydroxide, halo, azido, amino, methoxy, allyloxy or alkyl group.

16. The method of claim 13 wherein said oligonucleotide has from about 5 to about 50 nucleotide bases.

17. The method of claim 13 wherein said modification is at the 3' end of said oligonucleotide.

18. The method of claim 1 wherein at least one of the sugar linking groups of said modified oligonucleotide is replaced with a carbon or ether linkage.

19. The method of claim 18 wherein a 5'-methylene group and carbocyclic sugar are removed.

20. The method of claim 13 wherein the oligonucleotide is further modified such that at least some of the sugar linking groups of said oligonucleotide are modified to comprise a phosphorothioate, methyl phosphonate, or phosphate alkylate.

21. The method of claim 13 wherein the oligonucleotide is in a pharmaceutically acceptable carrier.

22. The method of claim 13 wherein said selected sequence of RNA or DNA comprises a portion of a HIV genome.

23. The method of claim 13 wherein said selected sequence of RNA or DNA comprises a portion of a herpes virus genome.

24. The method of claim 13 wherein said selected sequence of RNA or DNA comprises a portion of a papilloma virus genome.

25. A method for treating an organism having a disease characterized by the undesired production of a protein comprising contacting the organism with a nuclease resistant oligonucleotide or oligonucleotide analog having a sequence of bases specifically hybridizable with a RNA of DNA sequence coding for said protein, wherein at least one of the 2'-deoxyfuranosyl moieties of the nucleoside unit is modified, either alone or in combination with a pharmaceutically acceptable carrier.

26. The method of claim 25 wherein said modification comprises substitution by H, OH, halo, azido, amino, substituted amino, cyano, halomethyl, isocyanato, alkoxyl, thioalkoxyl, haloalkoxyl, alkyl sulfide, alkyl sulfonate, nitrate, nitrite, ammonium, allyloxy or alkeneoxy.

27. The method of claim 25 wherein said modification comprises substitution by H, OH, halo, azido, amino, methoxy, allyloxy or alkyl.

28. The method of claim 25 wherein said oligonucleotide has from about 5 to about 50 nucleotide bases.

29. The method of claim 25 wherein said modification is at the 3' end of said oligonucleotide.

30. The method of claim 25 wherein at least one of the sugar linking groups of said modified oligonucleotide is replaced with a carbon or ether linkage.

31. The method of claim 30 wherein a 5'-methylene group and carbocyclic sugar are removed.

32. The method of claim 25 wherein at least some of the sugar linking groups of said modified oligonucleotide are modified to comprise a phosphorothioate, methyl phosphonate, or phosphate alkylate.

33. The method of claim 25 wherein said oligonucleotide is in a pharmaceutically acceptable carrier.

34. The method of claim 25 wherein said sequence of RNA or DNA comprises a portion of a HIV genome.

35. The method of claim 25 wherein said sequence of RNA or DNA comprises a portion of a herpes virus genome.

36. The method of claim 25 wherein said sequence of RNA or DNA comprises a portion of a papilloma virus genome.